An Investigation into the Students Undertaken the Defect Associated With Teaching and Learning of Sciences in Higher Institutions of Adamawa State Nigeria

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Abstract

Exploring the challenges faced by students in the teaching and learning of sciences in higher institutions of Adamawa state in college of education, Hong three research objectives instruments were used in collecting relevant data Percentage and raw a score were used to analysis the date collected thus, the major findings of the research stated that the following are responsible for students failure in sciences at higher institutions in Adamawa state, to find out reasonable information as regard to the probable obstacles that affect students attitude towards sciences is to find out the enough and qualified teachers that are employed to teach sciences in schools to find out whether the use of laboratory and other teaching materials can help greatly in sciences to find out whether students have possible attitudes and interest towards sciences to find out whether the parental socio-economic status impact upon the child achievements in sciences, the major findings of the research stated that the following are responsible for students failure in sciences at higher institutions Lack of qualified and insufficient teachers, instructional materials, interest in part of students in sciences.

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Introduction

There could be no doubt that there is general agreement that every child should be enlightened sciences at every school. The study of sciences is indispensable, because all technology and new inventions depends on the knowledge of sciences, but most students consider it the most difficult subject.

Cock-Crofe (2015) observed that "It will be very difficult perhaps impossible to live a normal life in many parts of the world in the twentieth century without the use of sciences. Science is a vital part of education of all people. It is an essential requirement for everyday life in modern society. It is one of the powerful tools that man has slowly forget in his quest to understand and hence to control his environment.

Therefore, the knowledge of sciences is used for developing scientific structures, drawing conclusions and solving problems. It is characterized for simplicity, accuracy, certainty of results. It can be used to sharpen the mind in training and analysis. We can generally say that sciences is the ability to analyze a correct situation into its elements to synthesis components into a related whole, to isolate and select relevant factors, determining them vigorously. So as to give our students the following:

a) The ability to generate interest in sciences and to provide a solid formation for everyday life.

b) To develop a precise, logical, and abstract thinking.

c) To provide necessary scientific background for further education.

d) To develop ability to recognize problems and to solve them with related scientific knowledge.

Our students continue to lose interest in the study of sciences because they lack computational skills and the facilities for teaching the subject are not there.

According to Lasba and D. Palling (2016) if a country wishes to produce men and women to the problems cope with the subject (sciences) at higher level, then it must make sure that the proper foundation is provided.

It has become important to consider the decreasing number of students in science related subjects even though the subject is made compulsory at all levels of learning in our primary and junior secondary Education. The researchers attempted to find out from the students what is responsible for their failure in sciences at higher level of Education.

The research tries to find out from the students what they feel is responsible for the failure in Sciences at high level of Education with the following Objectives:

a) To find out reasonable information as regard to the probable obstacles that affect students' attitude towards Sciences.

b) To investigate if there are enough and qualified teachers that are employed to teach Sciences in schools.

c) To find out whether the use of laboratory and other teaching materials can help greatly in teaching Sciences.

d) To carry out whether students have possible attitudes and interest towards Sciences.

e) To investigate the parental socio-economic status impact upon the child achievements in Sciences.

From the stated research problems, the following hypotheses of the research are formulated:

i. There are no significant relationship between their attitude and performance in Sciences.

ii. There are no significant differences in student performance in Sciences on the basis of gender.

iii. There is no significant deference in student's performance in Sciences on the basis of socio-economic background.

This research should provide a useful and successful information and recommendation to set the present trend so far discoursed. It is expected that the research will reveal several factors and put fighter on useful causes of study of Sciences. The researcher work will be great use to the ministry of education finding lasting solution to simple problems in higher institutions in Adamawa State and the country as a whole.

The researcher assumes that there are some defects associated with studies of Sciences in Adamawa State College of education Hong.

Some of the defects are:

i. Lack of interest in sciences

ii. Lack of qualified Sciences teachers

iii.   Students' negative belief

iv.   Parental socio-economic status of low-class parent contributes to the defects they have in sciences.

Techniques used in data Analysis

a)   Evaluation of Questionnaire Forms: - basically the data on which these techniques are used came from the questions administered by the investigator. The questionnaires were in form of broad statement each of which indicates a possible cause of low performance by students in selected institutions in Adamawa State. Against each statement four alternative choices were given in columns to show the degree of agreement and disagreement. They are strongly agreed, agree, and strongly disagree. Respondent were instructed to put a tick (√) were appropriate. according to how they take the reason given in order to make an analysis easy, the four alternative choices in the columns were represented by letter S.A.A.D. and S.D. that is S.A. stand for strongly agree and S.D. stands for strongly Disagree.

The questionnaires were classified under seven categories, these are:

i.   Teachers/Method of Teaching

ii.   Attitude of Students

iii.   Home Influence

iv.   Background in Sciences

v.   Nature of Sciences

vi.   Examination Questions

vii.   Sex Difference

Institutions selected as Samples were selected from only three (3) higher institutions in Adamawa state.

The selection of the sample was done based on those who have difficulties in Sciences. In each higher institution they were stratified into males and females in the ratio 3:1 that is after stratifying each institution into boys and girls, 20 students from each of the institution made up of 15 boys and 5 girls.

Method of balloting

For boys' group, 23 YES were written on pieces of papers mixed with other pieces on which NO were written. The pieces of the papers were folded, those with yes were chosen. The same processes were carried out simultaneously in each of the institutions to obtain the required samples. The same process was also followed to select 5 girls in each institution.

Collection of Data

A total of sixty (60) questionnaires were administered in the three (3) institutions. In order to make the analysis precise, the responses were grouped according to the headings, the percentage average was taken and the highest was considered.

Presentation and Analysis of Data

In anticipation of the fulfillment of the task, questionnaires were distributed to the various institutions Adamawa state college of education Hong, College of Agriculture Ganye and College for legal studies Yola in accordance with the sample population. Data collected were presented in percentage and in tables as shown below.

Table 1: Percentage of respondents under teaching method in Adamawa state college of education Hong,

S/N	STATEMENT PERCENTAGE		(%)		
		S.A	A	D	S.D
1	My Teacher do not use teaching aids	4.5	35	10	10
2	I do not understand the topic before teacher move onto the next one	40	35	5	20

S/N	STATEMENT	S.A	A	D	S.D
3	The teacher does not know how to teach Sciences	30	35	5	30
4	My teacher does not gives us the solution to the problems we get wrong	30	25	15	30
	Average	35.25	27.5		20

The table above revealed that the average of 35.25% of the respondents strongly agreed with the statement that teaching methods or teachers are the factors that led to the poor performance of Students in mathematics. And 27.5% disagreed with statement.

Table 2: Percentage of respondent under teaching method of teachers in College of Agriculture Ganye in Adamawa State

S/N	STATEMENT PERCENTAGE			(%)	
		S.A	A	D	S.D
1	My Teacher do not use teaching aids	50	30	10	10
2	I do not understand the topic before teacher move onto the next one	35	2535	30	10
3	The teacher does not know how to teach Sciences	65	05	15	15
4	My teacher does not gives us the solution to the problems we get wrong	45	40	10	5
	Average	48.75	16.15	15	1.0

Based on the above table 48.75% strongly agree that teaching method of teachers is the factors that leads to the poor performance of student in Sciences.

Table 3: Percentage of the respondent under methods of teaching in college for legal studies Yola

S/N	STATEMENT PERCENTAGE			(%)	
		S.A	A	D	S.D
1	My Teacher do not use teaching aids	45	40	10	5
2	I do not understand the topic before teacher move	35	25	20	20

S/N	STATEMENT PERCENTAGE				(%)
			S.A	A	D	S.D
	onto the next one					
3	The teacher does not know how to teach Sciences	50	20	20	10
4	My teacher does not gives us the solution to the problems we get wrong	45	15	20	20
	Average	43.75	25	17.5	13.75

Based on the above table 3, it has been found that 43.75% of the respondents strongly agree that teaching methods is a factor that leads to the poor performance in Sciences by students while 17.5% disagree with the above statement.

Table 4: Percentage of the respondents under method of teaching in Adamawa state college of education Hong.

S/N	STATEMENT PERCENTAGE			(%)	
		S.A	A	D	S.D
1	Taking mathematics is waste of time	50	10	10	30
2	I do not have time to practice solving Sciences problems in the class	45	25	30	20
3	I am not the type that will do well in Sciences	45	30	15	15
	Average	45	21.65	11.67	21.65

From the above table it has been revealed that 45% of the respondents strongly agree that attitude of students is a factor that leads to poor performance in Sciences as against 21.65% disagree with the statement.

Table 5: Percentage of the respondents under attitude of students in Adamawa state college of education Hong

S/N	STATEMENT PERCENTAGE			(%)	
		S.A	A	D	S.D
1	Taking mathematics is waste of time	60	20	15	15
2	I do not have time to practice solving Sciences	50	25	15	10

S/N		S.A	A	D	S.D
	problems in the class				
3	I am not the type that will do well in Sciences	55	10	20	25
	Average	55	18.33	16.67	10

Based on the above table, it has been found that 55% of the respondents strongly agree that attitude of the students is a factor that leads to the poor performance in Sciences by students while only 10% strongly disagree with the above statement.

Table 6: Percentage of the respondents under attitude of students in College of Agriculture Ganye

S/N	STATEMENT PERCENTAGE		(%)		
		S.A	A	D	S.D
1	Taking mathematics is waste of time	35	25	15	25
2	I do not have time to practice solving Sciences problems in the class	35	30	20	15
3	I am not the type that will do well in Sciences	40	25	15	20
	Average	35.67	26.67	17.67	19.67

Since 35.67% is the highest percentage therefore, it is revealed that the attitude of students toward Sciences is a factor that leads to poor performance by the statement and 19.67% strongly disagree with the statement attitude lead to the poor performance of students.

Table 7: Percentage of respondents under home influence in Adamawa state college of education, Hong

S/N	STATEMENT PERCENTAGE		(%)		
		S.A	A	D	S.D
1	My parents are not ready to buy Sciences text books for me.	40	30	20	10
2	My parents do not check my performance in Sciences.	45	35	10	10

S/N	STATEMENT PERCENTAGE	S.A	A	D	S.D
3	My parent does not help me in Science assignments.	40	25	25	10
	Average	41.67	30	18.33	10

The above table revealed that 41.67% of the respondents strongly agree that influence of home is a factor that leads to the poor performance of students in the area of study and 10% strongly disagree with the statement home influence is a factor that led to the poor performance of students.

Table 8: Percentage of respondents under home influence in College of Agriculture Ganye

S/N	STATEMENT PERCENTAGE		(%)		
		S.A	A	D	S.D
1	My parents are not ready to buy Sciences textbooks for me.	55	15	20	10
2	My parents do not check my performance in Sciences.	60	30	5	5
3	My parent does not help me in Sciences assignment.	58	20	10	12
	Average	57.67	21.67	11.63	9

From the above table it has been revealed that 57.67% of the respondents strongly agree that home influence is a factor that leads to the poor performance in Sciences and 9% strongly disagree with the statement that home influence is a factor that leads to the poor performance of students.

Table 10: Percentage of respondents under background in Sciences in Adamawa state college of education, Hong

S/N	STATEMENT PERCENTAGE		(%)		
		S.A	A	D	S.D
1	I have not been good in Sciences since my primary school.	65	20	5	10

S/N		S.A	A	D	S.D
2	Only addition and subtraction were taught in my primary school.	45	40	30	15
3	I do not enjoy construction with Sciences.	40	20	20	20
	Average	48.33	23.33	13.33	15

From the above table, it has been revealed that 48.33% strongly agree that they have bad background which leads to their defects in Sciences.

Table 11: Percentage of respondents under background in Sciences in College of Agriculture Ganye

S/N	STATEMENT PERCENTAGE			(%)	
		S.A	A	D	S.D
1	I have not been good in Sciences since my primary school.	60	10	25	5
2	Only addition and subtraction were taught in my primary school.	40	10	25	25
3	I do not enjoy construction with Sciences.	50	15	30	5
	Average	50	11.67	26.67	11.67

Revealed that 50% of the respondents strongly agree that background of the students is a factor that contributed to the defects the students had in Sciences and only 11.67% strongly disagree. So from that students have bad background from their primary and secondary schools in Sciences.

Table 12: Percentage of the respondent under background in Sciences in college for legal studies Yola

S/N	STATEMENT PERCENTAGE			(%)	
		S.A	A	D	S.D
1	I have not been good in Sciences since my primary school.	30	30	20	20

S/N		S.A	A	D	S.D
2	Only addition and subtraction were taught in my primary school.	45	25	25	5
3	I do not enjoy construction with Sciences.	50	20	25	5
	Average	41.67	25	23.33	10

From the table above, it has been revealed that 41.67% strongly agreed that students' background is a factor that led to the failure of students in Sciences.

Table 13: Percentage of the respondent under the nature of Sciences in Adamawa state college of education, Hong

S/N	STATEMENT PERCENTAGE		(%)		
		S.A	A	D	S.D
1	Science is the most difficult subject in the school.	35	30	15	20
2	Sciences are for the gifted ones.	25	20	25	30
3	I do not understand the language of Sciences.	10	45	30	15
	Average	23.33	31.67	23.33	21.67

From the above table 31.67% agree that nature of Sciences is also a contributory factor for the poor performance in Sciences by students and 21.67% of the respondent strongly disagree with the statement.

Table 14: Percentage of the respondent understand nature of Sciences in College of Agriculture Ganye

S/N	STATEMENT PERCENTAGE		(%)		
		S.A	A	D	S.D
1	Science is the most difficult subject in the school.	65	15	15	5
2	Sciences are for the gifted ones.	55	5	35	35
3	I do not understand the language of Sciences.	25	5	35	35
	Average	48.33	8.33	25.33	15

Based on the table above, 48.33% of the respondent strongly agrees that the nature of Sciences contribute to the failure of Sciences by students which only 15% strongly disagree with the statement.

Table 15: Percentage of the respondent under the nature of Sciences in college for legal studies Yola.

S/N	STATEMENT PERCENTAGE		(%)		
		S.A	A	D	S.D
1	Science is the most difficult subject in the school.	50	20	15	15
2	Sciences are for the gifted ones.	50	15	15	20
3	I do not understand the language of Sciences.	60	70	15	5
	Average	53.33	18.33	15	13.32

From the above table, 53.33% of the respondent strongly agrees that nature of Sciences is a factor that leads to the poor performance in Sciences and only 13.32% strongly disagree with the statement.

Table 16: Percentage of respondent under examination in Adamawa state college of education, Hong

S/N	STATEMENT PERCENTAGE		(%)		
		S.A	A	D	S.D
1	I have no confidence in Exam	30	20	35	15
2	My teacher gives us examination on what he has not taught us.	55	25	15	20
	Average	42.5	22.5	20	15

Table 16 revealed that 42.5% of the respondent strongly agrees that examination is another factor that leads to the student's poor performance in Sciences while 15% strongly disagree with the statement.

Table 17: Percentage of respondent under examination in College of Agriculture Ganye

S/N	STATEMENT PERCENTAGE		(%)		
		S.A	A	D	S.D
1	I have no confidence in JSCE Exam	65	15	10	10
2	My teacher gives us examination on what he has not taught us.	40	20	35	5
	Average	52.5	17.5	22.5	7.5

The above table shows that 52.5% of the respondent strongly agrees that examination is a factor that leads to the poor performance in Sciences by student, while 7.5% strongly disagree with the statement.

Table 18: Percentage of respondent under examination in Adamawa state college of education, Hong

S/N	STATEMENT PERCENTAGE		(%)		
		S.A	A	D	S.D
1	I have no confidence in Exam	25	25	30	20
2	My teacher gives us examination on what he has not taught us.	10	30	45	15
	Average	17.5	27.5	37.5	17.5

The table above revealed that 37.5% of the respondent disagree with the statement that examination is not a factor that leads to the poor performance of student in semester examination as most 17.5% who strongly agree with the statement.

Table 19: Percentage of respondent under examination in college for legal studies Yola.

S/N	STATEMENT PERCENTAGE		(%)		
		S.A	A	D	S.D
1	Sciences is not for female students	15	40	25	20
2	Male student performance better than female	25	25	25	25
	Average	20	32.5	25	22.5

From the above table, it has been revealed that 32.5% agree that sex difference is a factor that leads to the poor performance in Sciences by students while, 22.5% strongly disagree with the statement.

CONCLUSION

It is important to point out here that, the students easy undertaken with the

Obtainability of Assumption

The defects student have in Sciences in Adamawa State from the data collected suggest the following main findings:

1. Majority of the student do not have interest in sciences.

2. There is no good working relationship between Sciences teachers and students.

3. Students do not do their work they are lazy; thus, they do not practice Sciences in the class.

4. Very few percentages of the student enter higher institution with little knowledge of sciences.

5. There is no encouragement from the student homes for most of the parent are literate and do not care about their performance in sciences.

6. Interaction between the students and teachers in Sciences class is very low due to communication problems; some students of NCE I cannot speak English language.

Recommendation

The following are some recommendations that may help or improve the performance in Sciences so that the present situation can be remedial.

1. The state government and ministry of education in particular should put more effort on training of good and competent Science teachers.

2. The school authority through P.T.A should try to enlighten the parents of the students on the importance of sciences to both the parents and their children's practical life so that they would encourage their children at home.

3. There should be remedial class to train the students entering NCEI for most of them have poor background in sciences so that they can follow up the instructional aids in the school.

4. Student should be given as much exercise as possible to enable them having adequate practice of concept taught. For it is only through concept practice that can they master some skill in sciences.

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